Johnson 1993e

STREAM: Corral Creek

DRAINAGE: West Fork Jarbidge River (Idaho) via Buck Creek (Nevada)

STATE WATER CODE: 1089

GAWS COMPUTER NO.: 170501,05,155,025,030,040

SURVEY DATES: July 13,and 14, 1992

REPORT DATE: April 8, 1993

WRITTEN BY: Larry Lee Johnson

SURVEY METHODOLOGY: The U.S. Forest Service Region 4, Level III Fisheries Habitat Survey Method (March, 1989) was utilized at four Sample Sites (SS) between the Forest Boundary and the headwater forks. Each SS was preplotted on the U.S. Geological Survey 7.5 min. topographic maps of the area. Stations located at the Forest Service Boundary and on the Right Fork were dry and hence, no survey work was completed at those sites.

The first 100 ft. at three SS's was sampled for fish using a one-pass effort with a Dirigo backpack electroshocker. An ocular survey for fish was conducted at SS-2 due to the very low stream flow conditions. Stunned fish were netted and held for fork length (mm) and weight (gm) measurement and general body condition assessment prior to their return to the stream. Fish seen escaping capture were recorded as misses and used in fish density estimate calculations. Aquatic invertebrate types and relative abundance were assessed following random stream and substrate inspection at each SS. Habitat transects were placed 50 ft. apart. Stream discharge was calculated for each SS using timed float, velocity estimates and water width and depth measurements over a 1m length

LAND OWNERSHIP AND ACCESS: Corral Creek heads on the Jarbidge District of the Humboldt National Forest. The lower 5.3 mi. of Corral Creek are on private ground belonging the Buck Creek Ranch. Public access to the Forest portion of stream is possible from Jarbidge via Deer Creek Grade or by traveling 4.7 mi. of 4x4 road from Bear Creek Summit located about 6 mi. from the town of Jarbidge. Only the upper 0.5 mi. of Corral Creek below the headwater forks is accessible by vehicle however, roads parallel the entire stream course on the drainage ridgelines.

WATERSHED DESCRIPTION: Corral Creek flows north from a 2.8 sq. mi. drainage within the Humboldt National Forest. Basin elevation ranges from 8386 ft. at the head of the basin divide to 6960 ft. where Corral Creek leaves the Forest. The confluence of Corral Creek and Buck Creek is at the 6040 ft. elevation. Valley form is of a low V-shape wherein valley sideslopes averaged 21.5 %. The

valley bottom width ranged from 3m at SS-5 to 14 m at SS-2. Parent Geology of the entire drainage is described as upper volcanic rocks (One-million Scale Geologic Map of Nevada, 1977).

Upland vegetation within the drainage consisted primarily of mountain shrubs dominated by sagebrush and aspen with an understory of grass and forbs except, at SS-5 and up-drainage where fir trees become more dominant. While upland conditions were dry, the upper basin slopes appeared stable during the period of survey.

WATER STATUS: Corral Creek was a losing stream that went from 0.13 cfs below the headwater forks to 0.03 cfs at SS-2 and completely dry at the Forest Boundary. Soil Conservation Service snow survey data for Bear Creek Meadow on May 1, 1992 showed the site was without snow whereas, there was snow at the site in six previous dry years. The Snake River drainage basin was only 26 % of average snow water content on May 1, 1992.

Stream temperature ranged from a low reading of 56°F to an afternoon high reading of 77°F. Temperatures taken at both SS-3 and SS-4 were above what is considered to be optimum trout growth temperature. The stream was recorded as clear and at a low flow stage during the survey period. Water chemistry data infers the stream has fairly low productivity (see below).

Spec. Cond.	-	146.2 umhos/cm
Alkalinity	-	102.7 mg/l
Hardness	-	85.6 mg/l
TDS	-	73.1 mg/l
D.O.	-	9.0 mg/l
CO2	-	10.0 mg/l
pH	-	8.0

STREAM HABITAT CONDITION INDEX (HCI): The overall, stream HCI was 63.6 percent of optimum or "fair". The lowest rated individual HCI parameter was pool structure wherein, the mean rating was 32.2 % of optimum. The mean pool structure rating through fish sample areas was 50.6 % of optimum. Half of the quality sized pool area within the fish population surveyed area was composed of shallow water with poor cover components. Bank stability percent of optimum was "good" to "excellent" at the two highest elevation SS's where ungulate bank trampling was minor. Bank stability at the lower two SS's was rated "poor" coincident with "moderate" to "heavy" ungulate bank damage.

STREAM CHANNEL TYPE AND STABILITY: The Forest portion of stream was characterized by a gradient of 2.0 % at both middle SS's and 3.0 % and 3.5 % at the lower and upper SS's, respectively. The streambottom at the upper and lower SS's was dominated by gravel and finer material whereas, gravel and rubble particles comprised the majority of substrate at the middle two SS's. Channel types ranged from Rosgen's B6 types at the lower three SS's to an A4 type at SS-5. Stream channel stability evaluations all rated "fair" with

a stream average of 88.0.

RIPARIAN CONDITIONS: Aspen dominated riparian overstory vegetation at the three lowest elevation SS's while fir trees were most apparent at the upper elevation site. Other associated species included low density willow shrubs. Understory vegetation was composed primarily of annual grass and various forbs including yarrow, monkey flower, aster, and false hellabore. Riparian habitat condition ranged from "poor" at SS-2 to "good" at SS-5 and SS's in between were in "fair" condition. The lowest scored riparian criteria was in all cases, density of shrubs. Ground cover was estimated at <60 % at SS-2 and between 70 % and 80 % SS-3 and SS-5. Increaser understory plants were dominant at SS-2 and SS-4 and invader plants were present. Heavy ungulate use of aspen seedlings and saplings was in evidence at the upper three SS's. Stream shade canopy averaged 52 % with the both the lowest and highest elevation SS's having a canopy density of about 75 %.

HABITAT VULNERABILITY: The Index of Habitat Vulnerbility (HVI) to management activities was "high" at all SS's. Streambank sensitivity ratings as determined from the combined stream channel stability scores for upperbank vegetative protection and lowerbank rock content ranged from a score of 12 at SS-5 to a "high" sensitivity rating of 19 at SS-2. A score of >13 indicates that one season of moderate livestock grazing can result in damaged streambanks. Both middle SS's had streambank sensitivity ratings of 13. Ungulate streambank damage ratings indicated "heavy" ungulate use at the two lowest elevation SS's and only "light" use at the upper two elevation SS's. Average undercut streambank frequency at habitat transect sites was 27.5 %. Streambottom embeddedness ratings were ranged from "moderate" to "heavy" and averaged 45.2 %.

FISH POPULATION: Two rainbow/redband trout were captured and another was seen but missed within the electrofished area at SS-5. The fish were of two different age classes and averaged 106 mm long. A trout was seen within the habitat transect survey area at both SS-3 and SS-4. Inadequate streamflow limits distribution of fish. Trout occuped about 2.3 mi. of stream on the Forest and an estimated total population of 111 fish including 10 catchable-sized fish (>6 in.). The mean number of trout per mile was 48.4.

Electrofishing at the same location as SS-5 on August 14, 1974 resulted in the capture of one five-inch trout for an average of 52 trout per mile. Department of Wildlife fish stocking records indicate that 1000 fingerling cutthroat trout were stocked into Buck Creek from Hagerman Hatchery on October 20, 1936.

AQUATIC FAUNA AND FLORA: Mayflies and caddisflies were found throughout the length of stream with the latter being more abundant with up to four different species present. The greatest variety of aquatic invertebrates was found at SS-5 where planaria and dipteran larvae were present and water striders were not seen. Stonefly

larvae were present at the upper three SS's. There was a trace of moss found at SS-4.

BEAVER STATUS: There was no past or present evidence of beaver activity in the surveyed portion of Corral Creek. Considering the low density of willow, beaver would be dependent on aspen which is currently being browsed "heavy" by ungulates.

CONCLUSIONS

STREAM'S IMPORTANCE: Corral Creek supports a limited wild rainbow/redband trout population on the Humboldt National Forest portion of stream.

ANGLER USE: Corral Creek annual angler use for the period 1981-1990 averaged 54.8 angler days use.

ISSUES AND CONCERNS: The Forest portion of stream is receiving excessive livestock use that is damaging streambanks, silting the streambottom and preventing optimum riparian conditions.

The post-survey Coffeepot fire caused additional concerns for stream sedimentation and riparian rehabilitation within the Corral Creek watershed.

RECOMMENDATION: The Buck Creek C&H Allotment management should be revised to allow for improvement of riparian and stream conditions with necessary protection of burned areas from grazing pressure to be included.